CONCISE EXPLANATION OF REFERENCES

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US Patent	File Date	Publication	Comments
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		Or	
		Issue Date	
JP (A) 2000·130123	Oct. 22,	May 9,	In a valve driving device, a rig-type sensor is
	1998	2000	provided on the periphery of a taper part of an
			armature shaft. Then, the valve position can
			be accurately and reliably detected by directly
			detecting the moving speed and the position of
			an armature by this rig-type sensor. Voltage is
			applied to an upper coil, the moving speed and
			the position of the armature are detected by the
			ring-type sensor, and correction for the upper
			coil applied voltage is performed by feedback
			control on the basis of the detected signal
			output from the rig type sensor. Therefore, the
			failure of attraction of the valve and a hard hit
			of the valve can be prevented. Accordingly,
			valve attraction is reliably performed, and the
			generation of hammering sound in valve
			closing can be reliably reduced.
JP (A) 2001-130124	Oct. 26, 1998	May 9, 2000	In an electromagnetic driving device for a valve
01 (10 2001 100121			element of an internal combustion engine,
			electromagnetic force generated when voltage
			is applied to electromagnetic coils wound
			around the cores is made to act on movable
			elements positioned in spaces in cores, and
			valve elements of the engine are driven by

JP (U) 63-126817	Feb. 10, 1987	Aug. 18, 1988	drive shafts to which the movable elements are fixed. Each core is composed of two core members connected to each other while forming a movable range for the movable element, and a non-contact type displacement detecting means for detecting the movement of the drive shaft is housed in each inner space formed of the cores. By this configuration of the electromagnetic driving device, a small size thereof is easily achieved without needing any special place. In a detecting device for detecting a displacement of an movable element, the movable element has a tapered surface. The detecting device has two sensors. The movable element is sandwiched between the two sensors of the detecting device. The detecting device measures two gaps between the tapered surfaces and the sensors of the detecting device.
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